

ENZYMATIC PROCESSES FOR THE PRODUCTION OF 4-SUBSTITUTED
3-HYDROXYBUTYRIC ACID DERIVATIVES AND VICINAL CYANO, HYDROXY
SUBSTITUTED CARBOXYLIC ACID ESTERS

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ABSTRACT OF THE DISCLOSURE

The present invention provides methods and compositions for preparing 4-substituted
3-hydroxybutyric acid derivatives by halohydrin dehalogenase-catalyzed conversion of
4-halo-3-hydroxybutyric acid derivatives. The present invention further provides methods
and compositions for preparing 4-halo-3-hydroxybutyric acid derivatives by ketoreductase-
10 catalyzed conversion of 4-halo-3-ketobutyric acid derivatives. The present invention also
provides methods and compositions for preparing vicinal cyano, hydroxyl substituted
carboxylic acid esters.